

Selah Moxee Irrigation District
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Trust Transfer Memo
From Kenneth Mitchell/Lee White
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The Selah-Moxee Irrigation District (SMID) began a real effort in 1994 to modernize its irrigation system and improve efficiencies with the intent to conserve water for the Yakima River Basin. The District consolidated in 1994 by combining with the Moxee and Hubbard Canals and the irrigators began the initial installation of drip irrigation for the hop yards. The drip installation was completed in about 1998. A Comprehensive Water Conservation Plan was authorized in 1994 and completed in 1995. In 2000 an act of God deprived the district of the Diversion point for the Moxee and Hubbard Canals. The Washington State Department of Fish & Wildlife would not allow the District to repair the river breach and BPA paid for a pump station on the Roza Wasteway. The District began a lining program and lined the first five miles of the main canal in East Selah in 2002. The District then continued lining in 2003 and 2004.

Maximum diversions were required for the fulfilling of delivery requirements until 1995 when significant drip had been installed to change operation. Farmers were encouraged to consolidate deliveries so as to reduce loss resulting from multiple diversions. With the loss of the Moxee and Hubbard diversion and the costs associated with replacement pumps, reduction in demand was even more necessary. In 2003, the District installed a delivery drop from the Selah-Moxee Canal to the Hubbard Canal so that lands of the Moxee and Hubbard Canals could also be served from the Selah-Moxee Canal. This consolidation of the canals under one headworks allowed other conservation for the entire District. Savings on any canal accrued to the other canals.

In 2004, the District put 7,500 acre-feet of water from the Moxee and Hubbard Canals into the Washington Water Trust. A small amount of this water was used to assist domestic water users having post 1905 water rights. The District put 10,000 acre-feet into the Trust Program for 2005 & 2006.

SMID proposes to continue the reduction of diversions formerly made at the Moxee Hubbard diversion by 10,000 acre-feet. That reduced diversion will be available for donation into the Trust. The source and former use of the donated water is shown on the attached spreadsheet. A portion of this savings has been occurring as a result of ongoing transition to drip irrigation. This trust water is composed of water that has no effect on TWSA and some surface runoff that may have a potential impact on TWSA.

The first portion of the water that has no impact on TWSA is water saved from deep percolation on hop fields by conversion to drip irrigation. It amounts to 10% of the applied water prior to conversion to drip. Prior to conversion to drip approximately 4 acre-feet per acre was applied to 4,310 acres or 17,240 acre-feet. The reduction of the water going to deep percolation by changing to drip is 1,724 acre-feet. The Moxee Valley has a declining water table. Any reduction of deep percolation losses will not affect TWSA since the loss recharges groundwater rather than returning to the Yakima River.

The conversion to drip allowed the reduction of area consumptively using water by 15% consisting of the total land area in irrigation in head ditches and tail ditches that have an active consumptive use. Conversion to drip makes the head ditches and tail ditches unnecessary and reduces the amount of land that is consumptively using water. This water use is by the nonproductive area in head ditches, tail water collection ditches and drains leaving the hop fields or a reduction of 646.5 acres. At 4 acre-feet per acre, the reduction is use equals 2586 acre-feet. These reductions are temporary for only as long as the field remains in drip irrigation.

The conversion to drip irrigation also reduced the consumptive use of the hop crop since there is no vegetation growing outside the rows. Prior to conversion the field was totally vegetated and therefore required more water. The Washington Irrigation Guide shows for Moxee shows that the crop requirement for hops is 27.88 inches per acre. Growers on the Selah-Moxee Irrigation District have identified that they have full production of hops with drip using only 21 inches, thus saving 6.88 inches in actual consumptive use because of the drip irrigation. The 4,310 acres in full production for 2004 thus have a reduction of 1.668 acre feet.

The District abandoned the feeder canal from the river for 6,000 feet when the bank was breached in 2000. The consumptive use area that was abandoned was about 200 feet wide at that time, all of which was reduced by the abandonment. The Moxee Canal had about 2,500 feet that was abandoned at the time. The total abandoned canal area consisted of 39 acres of vegetated area. At 4 acre-feet per acre, the water use reduction is 156 acre-feet.

There was significant seepage from the Moxee and extended from the upper side of the canal to the Hubbard Canal, about 200 feet. The vegetation that was reduced was all willows and other phreatophytes that have a consumptive use of 4 AF/acre. The lining of the canals in 2002, 2004 and 2005 has resulted in the reduction of consumptive use of phreatophytes on the down slopes of the canal. The canals were lined in these locations because the steepness of the slopes that impacted safety and the attempted maintenance that was unsuccessful for killing the willow and poplars. The success of the lining is evident because water has ceased to emerge from the hillsides causing sloughs and the willows are not surviving on the slopes since lining installation.

Additionally some lands will not be irrigated in 2007. These lands if they were to be irrigated in 2007 would be in pasture with a consumptive use requirement of 35.15 inches (the calculations use 3 feet/acre). Waters from these idle lands will not be diverted and will be available for transfer to Trust.